



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care



NATIONAL
QUALITY MEASURES
CLEARINGHOUSE

General

Title

Diagnostic imaging: percentage of surgical patients aged 18 years and older undergoing procedures with the indications for prophylactic parenteral antibiotics who have an order for prophylactic parenteral antibiotic to be given within 1 hour (2 if fluoroquinolone or vancomycin).

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of surgical patients aged 18 years and older undergoing procedures with the indications for prophylactic parenteral antibiotics who have an order for prophylactic parenteral antibiotic to be given within 1 hour (2 if fluoroquinolone or vancomycin).

Rationale

The appropriate timing of administration of prophylactic parenteral antibiotics has been demonstrated to reduce the incidence of surgical wound infections. Specifying the time of administration in the order is critical as available evidence suggests that the drug should be received within one hour before incision for maximum antimicrobial effect.

Clinical Recommendation Statement: Overall, administration of the first dose of antimicrobial beginning within 60 minutes before surgical incision is recommended. Administration of vancomycin and

fluoroquinolones should begin within 120 minutes before surgical incision because of the prolonged infusion times required for these drugs (American Society of Health-System Pharmacists [ASHP], 2013).

Infusion of the first antimicrobial dose should begin within 60 minutes before incision. However, when a fluoroquinolone or vancomycin is indicated, the infusion should begin within 120 minutes before incision to prevent antibiotic-associated reactions. Although research has demonstrated that administration of the antimicrobial at the time of anesthesia induction is safe and results in adequate serum and tissue drug levels at the time of incision, there was no consensus that the infusion must be completed before incision (Bratzler et al., 2004).

Evidence for Rationale

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

American Society of Health-System Pharmacists. ASHP therapeutic guidelines on antimicrobial prophylaxis in surgery. American Society of Health-System Pharmacists. Am J Health Syst Pharm. 1999 Sep 15;56(18):1839-88. [559 references] [PubMed](#)

Bratzler DW, Houck PM, Surgical Infection Prevention Guidelines Writers Workgroup, American Academy of Orthopaedic Surgeons, American Association of Critical Care Nurses, American Association of Nurse Anesthetists, American College of Surgeons, American College of Osteopathic Surgeons, American Geriatrics Society, American Society of Anesthesiologists, American Society of Colon and Rectal Surgeons, American Society of Health-System Pharmacists, American Society of PeriAnesthesia Nurses, Ascension Health, Association of periOperative Registered Nurses, Association for Professionals in Infection Control and Epidemiology, Infectious Diseases Society of America, Medical Letter, Premier, Society for Healthcare Epidemiology of America, Society of Thoracic Surgeons, Surgical Infection Society. Antimicrobial prophylaxis for surgery: an advisory statement from the National Surgical Infection Prevention Project. Clin Infect Dis. 2004 Jun 15;38(12):1706-15. [90 references] [PubMed](#)

Primary Health Components

Surgery; prophylactic parenteral antibiotic

Denominator Description

All surgical patients aged 18 years and older undergoing procedures with the indications for prophylactic parenteral antibiotics

Numerator Description

Surgical patients who have an order for prophylactic parenteral antibiotic to be given within one hour (if fluoroquinolone or vancomycin, two hours) prior to the surgical incision (or start of procedure when no incision is required) (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and

organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

The measures in this set are being made available without any prior formal testing. However, these measures are included in the Centers for Medicare and Medicaid Services (CMS) approved American College of Radiology (ACR) National Radiology Data Registry, a CMS Physician Quality Reporting System (PQRS) Qualified Clinical Data Registry since 2014.

The ACR recognizes the importance of thorough testing all of its measures and encourages ongoing robust testing of the ACR National Radiology Data Registry measurement set for feasibility and reliability by organizations or individuals positioned to do so. The ACR will welcome the opportunity to promote such testing of these measures and to ensure that any results available from testing are used to refine the measures on an ongoing basis. Since these measures are in use for quality improvement and reporting, we can support data analysis of registry data to perform the testing, such as evaluation of gaps for validity testing, and signal-to-noise estimation for reliability testing.

Evidence for Extent of Measure Testing

Blakey A. (Administrator, Quality Management Programs, American College of Radiology, Reston, VA). Personal communication. 2016 Mar 7. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory Procedure/Imaging Center

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities

Making Care Safer

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Safety

Timeliness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

All surgical patients aged 18 years and older undergoing procedures with the indications for prophylactic parenteral antibiotics

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Surgical patients who have an order for prophylactic parenteral antibiotic to be given within one hour (if fluoroquinolone or vancomycin, two hours) prior to the surgical incision (or start of procedure when no incision is required)

Note: Refer to the original measure documentation for administrative codes.

Exclusions

Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Registry data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Timing of antibiotics-ordering physician.

Measure Collection Name

National Radiology Data Registry Measurement Set

Submitter

Developer

American College of Radiology - Medical Specialty Society

Funding Source(s)

None

Composition of the Group that Developed the Measure

The American College of Radiology (ACR) National Radiology Data Registry (NRDR) helps facilities benchmark outcomes and process-of-care measures and to develop quality improvement programs. The composition of the workgroup is has representation from each of our six data registries:

- CT Colonography Registry Committee (CTC)
- Dose Index Registry Committee (DIR)
- General Radiology Improvement Database Committee (GRID)
- National Mammography Database Committee (NMD)
- Lung Cancer Screening Registry Committee (LCSR)
- IR & INR Registries (Interventional Radiology)

Committee Members

- Morin Richard, PhD, FACR, Chair of NRDR
- Kalpana Kanal, PhD, Chair of DIR
- Zuley Margarita, MD, Chair of NMD
- Abe Dachman, MD, Chair of CTC Committee
- Frank Rybicki, MD, Chair of Metrics Committee
- Siegel Eliot, MD, RSNA Liaison
- Chad Calendine, MD, Co-Chair of GRID
- Geoffrey Wiot, Co-Chair of GRID
- Jeremy Durack, Chair of IR Registry Committee
- Ella Kazerooni, Co-Chair of Lung-Cancer Screening Committee
- Deni Aberle, Co-Chair of Lung-Cancer Screening Committee

Committee Staff

- Judy Burleson, MHSA, American College of Radiology
- Mythreyi Bhargavan Chatfield, PhD, American College of Radiology

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

This measure is reviewed annually

Date of Next Anticipated Revision

2017 Mar

Measure Status

This is the current release of the measure.

Measure Availability

Source available from the [American College of Radiology \(ACR\) Web site](#) .

For more information, contact ACR at 1891 Preston White Drive, Reston, VA 20191; Phone: 703-648-8900; E-mail: nrd@acr.org; Web site: www.acr.org .

NQMC Status

This NQMC measure summary was completed by ECRI Institute on December 11, 2015. The information was verified by the measure developer on March 7, 2016.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

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Production

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

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